

CLAIMS

1. (canceled)
2. **(currently amended)** The method according to claim 6, wherein during growth, the intervertebral disk cells isolated from said degenerate prolapsed intervertebral disk tissue are cultured in a cell culture medium including 1-20% of added autologous serum, wherein the cell culture medium has a ratio of alpha-MEM medium and HAM-F12 medium which is between 2:1 and 1:2, at 36.8-37°C in air containing 5% carbon dioxide and said air having a humidity of 85-95%.
3. **(currently amended)** The method according to claim 13, wherein the isolated intervertebral disk cells, following growth thereof in monolayer, are cultured in a cell culture medium including 1-20% of added autologous serum, wherein the cell culture medium has a ratio of alpha-MEM medium and HAM-F12 medium which is between 2:1 and 1:2, at 36.8-37°C in air containing 5% carbon dioxide and said air having a humidity of 85-95%, thereby becoming capable of differentiating, forming matrix structures comprising specific intervertebral disk matrix proteins.
4. (previously presented) The method according to claim 6, wherein the isolated intervertebral disk cells, following growth thereof in monolayer, are frozen in a solution of 10% DMSO, 20% serum and 70% culture medium, followed by thawing, so that their properties with respect to the synthesis of specific matrix components and markers remain unchanged and tissue structures consisting of intervertebral disk-specific matrix proteins are formed *in vitro* and *in vivo*.
5. (canceled)
6. **(currently amended)** A method for the production of intervertebral disk cell transplants,

wherein vital intervertebral disk cells are isolated from at least one of degenerate prolapsed intervertebral disk tissue and affected intervertebral disk tissue wherein anulus fibrosus cells and nucleus pulposus cells so isolated are cultured as a mixture of these cells and cultured as in a monolayer with addition of autologous serum autologous to the source of the cultured cells and/or the intended recipient of the transplant, without addition of exogenic growth-promoting compounds and without addition of antibiotics and fungistatic agents, thereby obtaining intervertebral disk cell transplants having cells which are capable of proliferation, migration and differentiation.

7. (withdrawn) The transplant according to claim 15 as an intervertebral disk tissue regeneration agent.
8. (withdrawn) The transplant according to claim 15, wherein multiple tissues are fused with each other.
9. (withdrawn) The transplant according to claim 15, wherein the transplant is a mixture of cultured cells formed by a first method wherein vital intervertebral disk cells are isolated from at least one of degenerate prolapsed intervertebral disk tissue and affected intervertebral disk tissue and cultured as monolayer with addition of autologous serum, thereby obtaining intervertebral disk cell transplants having cells which are capable of proliferation, migration and differentiation, and three-dimensional tissue formed by a second method wherein intervertebral disk cell transplants produced according to the first method are cultured with addition of autologous serum, thereby obtaining three-dimensional intervertebral disk tissue transplants consisting of internal vital, differentiated cells having an extracellular matrix, and a peripheral proliferation zone.
10. (withdrawn) The transplant according to claim 15, wherein the intervertebral disk cell transplants or the intervertebral disk tissue transplants are provided as injection solution in a syringe.

11. (withdrawn) A method for testing active substances, comprising the step of using the transplants produced according to either a first method wherein vital intervertebral disk cells are isolated from at least one of degenerate prolapsed intervertebral disk tissue and affected intervertebral disk tissue and cultured as monolayer with addition of autologous serum, thereby obtaining intervertebral disk cell transplants having cells which are capable of proliferation, migration and differentiation, or a second method wherein intervertebral disk cell transplants produced according to the first method are cultured with addition of autologous serum, thereby obtaining three-dimensional intervertebral disk tissue transplants consisting of internal vital, differentiated cells having an extracellular matrix, and a peripheral proliferation zone.
12. (withdrawn) A cell-therapeutic formulation, comprising transplants in accordance with claim 15.
13. **(currently amended)** A method for the production of intervertebral disk tissue transplants, wherein the intervertebral disk cell transplants produced according to claim 6 are cultured with addition of autologous serum in a culture vessel with hydrophobic surface and tapering bottom, thereby obtaining three-dimensional intervertebral disk tissue transplants ~~consisting of internal vital, differentiated cells~~ having an extracellular matrix, and a peripheral proliferation zone.
14. (canceled)
15. (withdrawn) Transplant produced according to at least one of the methods being: a first method wherein vital intervertebral disk cells are isolated from at least one of degenerate prolapsed intervertebral disk tissue and affected intervertebral disk tissue and cultured as monolayer with addition of autologous serum, thereby obtaining

intervertebral disk cell transplants having cells which are capable of proliferation, migration and differentiation; and a second method wherein intervertebral disk cell transplants produced according to the first method are cultured with addition of autologous serum, thereby obtaining three-dimensional intervertebral disk tissue transplants consisting of internal vital, differentiated cells having an extracellular matrix, and a peripheral proliferation zone .

16. (withdrawn) A method for treating affected intervertebral disks, wherein to the intervertebral disk of a patient in need of such treatment the transplant according to claim 15 is administered by injection.